WHAT IS CLAIMED IS:

1. A method of driving an image sensor, said image sensor including:

(a) a sensor module having a plurality of semiconductor photosensor chips mounted on a mounting substrate, wherein each semiconductor photosensor chip has:

signal holding means for holding light signals and noise signals read out from a plurality of photo-electric conversion elements;

a common output lines for respectively outputting the light signals and noise signals in said signal holding means;

reset means for resetting said common output line; and

read-out means for outputting the signals from said common output line; and

(b) a semiconductor device including:

noise and light signal input buffer means for receiving the noise signals and light signals from each sensor chip;

differential means for calculating a difference between outputs from said noise and light signal input buffer means; and

voltage clamping means for clamping an output

from said differential means,

said noise and light signal input buffer means, differential means, and voltage clamping means being formed on a single semiconductor substrate, said method comprising the steps of:

resetting said common output line by said reset means; and

clamping a reset state of said common output line by said voltage clamping means.

2. A method of driving an image sensor, said image sensor including:

(a) a sensor module having a plurality of semiconductor photosensor chips mounted on a mounting substrate, wherein each semiconductor photosensor chip has:

a plurality of photo-electric conversion means;

noise signal holding means for holding noise signals read out from said photo-electric conversion means;

light signal holding means for holding light signals read out from said photo-electric conversion means;

a noise signal common output line for outputting the noise signals held by said noise

signal holding means;

a light signal common output line for outputting the light signals held by said light signal holding means;

reset means for resetting said noise and light signal common output line; and

read-out means for reading out the signals from said noise and light signal holding means by capacitance division between said noise and light signal common output line; and

(b) a semiconductor device including:

noise signal input buffer means for receiving the noise signals;

light signal input buffer means for receiving the light signals;

differential means for calculating a difference between outputs from said noise and light signal input buffer means; and

voltage clamping means for clamping an output from said differential means,

said noise and light signal input buffer means, differential means, and voltage clamping means being formed on a single semiconductor substrate, said method comprising the steps of:

resetting said common output line by said reset means; and

clamping a reset state of said common output line by said voltage clamping means.

3. A method of driving an image sensor, said image sensor including:

(a) a sensor module having a plurality of semiconductor photosensor chips mounted on a mounting substrate, wherein each semiconductor photosensor chip has:

a plurality of photo-electric conversion means;

noise signal holding means for holding noise signals read out from said photo-electric conversion means;

light signal holding means for holding light signals read out from said photo-electric conversion means;

a noise signal common output line for outputting the noise signals held by said noise signal holding means;

a light signal common output line for outputting the light signals held by said light signal holding means;

reset means for resetting said noise and light signal common output line; and

read-out means for reading out the signals

from said noise and light signal holding means by capacitance division between said noise and light signal common output line; and

(b) a semiconductor device including:

noise signal input buffer means for receiving the noise signals;

light signal input buffer means for receiving the light signals;

differential means for calculating a difference between outputs from said noise and light signal input buffer means; and

voltage clamping means for clamping an output from said differential means,

said noise and light signal input buffer means, differential means, and voltage clamping means being formed on a single semiconductor substrate, said method comprising the steps of:

resetting said common output line by said reset means; and

clamping a state immediately after said common output line are reset by said voltage clamping means.

4. A method of driving an image sensor, said image sensor including:

(a) a sensor module having a plurality of semiconductor photosensor chips mounted on a mounting

substrate, wherein each semiconductor photosensor chip has:

a plurality of photo-electric conversion means;

noise signal holding means for holding a noise signal read out from said photo-electric conversion means;

light signal holding means for holding a light signal read out from said photo-electric conversion means;

a common output line for time-serially outputting the signals held by said noise and light signal holding means;

reset means for resetting said common output line; and

read-out means for sequentially reading out the signals from said noise and light signal holding means by capacitance division with said common output line; and

(b) a semiconductor device including:

signal input buffer means;

a gain amplifier for amplifying an output from said signal input buffer means;

an output buffer amplifier for outputting an output from said gain amplifier; and

voltage clamping means inserted between said

gain amplifier and said output buffer amplifier,

said signal input buffer means, gain amplifier, output buffer amplifier, and voltage clamping means being formed on a single semiconductor substrate, said method comprising the steps of:

resetting said common output line by said reset means; and

clamping a read-out state of the signal from said noise signal holding means by capacitance division with said common output line by said voltage clamping means.

5. A semiconductor device including:

(a) a sensor module having a plurality of semiconductor photosensor chips mounted on a mounting substrate, wherein each semiconductor photosensor chip has:

signal holding means for holding light signals and noise signals read out from a plurality of photo-electric conversion elements;

a common output line for respectively outputting the light signals and noise signals in said signal holding means;

reset means for resetting said common output line; and

read-out means for outputting the signals from said common output line;

(b) noise and light signal input buffer means for receiving the noise signals and light signals from each semiconductor photosensor chip;

(c) differential means for calculating a difference between outputs from said noise and light signal input buffer means; and

(d) voltage clamping means for clamping an output from said differential means,

said sensor module, light and noise signal input buffer means, differential means, and voltage clamping means being formed on a semiconductor substrate.

6. An image sensor comprising:

(a) a sensor module having a plurality of semiconductor photosensor chips mounted on a mounting substrate, wherein each semiconductor photosensor chip has:

a plurality of photo-electric conversion means;

noise signal holding means for holding noise signals read out from said photo-electric conversion means;

light signal holding means for holding light signals read out from said photo-electric conversion means;

a noise signal common output line for

outputting the noise signals from each of said photo-electric conversion means;

a light signal common output line for outputting the light signals from each of said photo-electric conversion means;

reset means for resetting said noise and light signal common output line; and

read-out means for reading out the signals from said noise and light signal holding means by capacitance division between said noise and light signal common output line; and

(b) a semiconductor device including:

noise signal input buffer means for receiving the noise signals;

light signal input buffer means for receiving the light signals;

differential means for calculating a difference between outputs from said noise and light signal input buffer means; and

voltage clamping means for clamping an output from said differential means,

said noise and light signal input buffer means, differential means, and voltage clamping means being formed on a single semiconductor substrate.

7. The sensor according to claim 6, wherein said

semiconductor photosensor chips and said semiconductor device are mounted on a single mounting substrate.

8. The semiconductor device according to claim 5, wherein a power supply voltage of said semiconductor device is higher than a power supply voltage of said semiconductor photosensor chips.

9. The sensor according to claim 6, wherein a power supply voltage of said semiconductor device is higher than a power supply voltage of said semiconductor photosensor chips.

10. The sensor according to claim 7, wherein a power supply voltage of said semiconductor device is higher than a power supply voltage of said semiconductor photosensor chips.

11. The semiconductor device according to claim 5, wherein GND wiring for said semiconductor device and GND wiring for said semiconductor photosensor chips are isolated from each other on said mounting substrate.

12. The sensor according to claim 6, wherein GND wiring for said semiconductor device and GND wiring for said semiconductor photosensor chips are isolated from

each other on said mounting substrate.

13. The sensor according to claim 7, wherein GND wiring for said semiconductor device and GND wiring for said semiconductor photosensor chips are isolated from each other on said mounting substrate.

14. The semiconductor device according to claim 8, wherein GND wiring for said semiconductor device and GND wiring for said semiconductor photosensor chips are isolated from each other on said mounting substrate.

15. An image sensor comprising:

(a) a sensor module having a plurality of semiconductor photosensor chips mounted on a mounting substrate, wherein each semiconductor photosensor chip has:

a plurality of photo-electric conversion means;

noise signal holding means for holding a noise signal read out from said photo-electric conversion means;

light signal holding means for holding a light signal read out from said photo-electric conversion means;

a common output line for outputting the noise

and light signals;

reset means for resetting said common output line; and

read-out means for sequentially reading out the signals from said noise and light signal holding means by capacitance division with said common output line; and

(b) a semiconductor device including:

signal input buffer means;

a gain amplifier for amplifying an output from said signal input buffer means;

output buffer means for outputting an output from said gain amplifier; and

voltage clamping means inserted between said gain amplifier and said output buffer means,

said signal input buffer means, gain amplifier, output buffer means, and voltage clamping means being formed on a single semiconductor substrate.

16. The sensor according to claim 15, wherein said semiconductor photosensor chips and said semiconductor device are mounted on a single mounting substrate.

17. The sensor according to claim 15, wherein a power supply voltage of said semiconductor device is higher than a power supply voltage of said semiconductor

photosensor chips.

18. The sensor according to claim 16, wherein a power supply voltage of said semiconductor device is higher than a power supply voltage of said semiconductor photosensor chips.

19. The sensor according to claim 15, wherein GND wiring for said semiconductor device and GND wiring for said semiconductor photosensor chips are isolated from each other on said mounting substrate.

20. The sensor according to claim 16, wherein GND wiring for said semiconductor device and GND wiring for said semiconductor photosensor chips are isolated from each other on said mounting substrate.

21. The sensor according to claim 17, wherein GND wiring for said semiconductor device and GND wiring for said semiconductor photosensor chips are isolated from each other on said mounting substrate.

22. An image sensor comprising:

a plurality of discrete photosensor chips, each of said photosensor chips including:

a plurality of photosensors for outputting

photo-electric conversion signals;

an intra-chip common output bus for connecting output terminals of said plurality of photosensors; and

a fan OUT circuit connected to said intra-chip common output bus;

an inter-chip common output bus connected to outputs of said plurality of photosensor chips; and

an amplifier circuit connected to said inter-chip common output bus, said amplifier circuit comprising:

a reception circuit for receiving signals on said inter-chip common output bus;

a clamping circuit connected to an output line of said reception circuit, said clamping circuit clamping said output line to a first power supply potential, and then changing said output line from the first power supply potential to a floating state; and

an output circuit for receiving an output from said clamping circuit, and outputting an output signal of said image sensor,

wherein an inter-chip offset variation is corrected by enabling said clamping circuit when the photosensor chip to be read out is switched.

23. The sensor according to claim 22, wherein said

plurality of photosensor chips are mounted on a single mounting substrate one- or two-dimensionally.

24. The sensor according to claim 22, wherein said amplifier circuit is formed on a semiconductor substrate.

25. The sensor according to claim 22, wherein said plurality of photosensor chips are mounted on a single mounting substrate one- or two-dimensionally, said amplifier circuit is formed on a semiconductor substrate, and said mounting substrate and semiconductor substrate are formed on a single board.

26. The sensor according to claim 22, further comprising a timing circuit generating:

a timing for changing the designated photosensor chip to another photosensor chip;

a timing for setting one photosensor in the changed photosensor chip;

a timing for transferring a charge of said one photosensor onto said intra-chip common output bus; and

a timing for enabling and disabling said clamping circuit.

27. The sensor according to claim 22, wherein said amplifier circuit comprises:

a gain circuit connected to an output side of said clamping circuit; and

a second clamping circuit connected to an output side of said gain circuit, and

wherein said second clamping circuit removes an individual difference of said second clamping circuit in units of image sensors by receiving a clamping signal generated once every time said image sensor starts image input.

28. The sensor according to claim 22, wherein said inter-chip common bus includes light and dark current common signal lines connected to said photosensors,

said fan OUT circuit has a source-follower circuit connected to said light and dark current common signal lines, and

said reception circuit of said amplifier circuit has a differential circuit for differentially amplifying signals on said light and dark current common signal lines,

whereby said differential circuit is shared by said plurality of photosensor chips.

29. The sensor according to claim 28, further comprising a reset circuit for resetting said light and dark current common signal lines at a common timing, and

wherein said clamping circuit starts and cancels clamping before a timing at which each photosensor in said photosensor chip captures light and dark current signals,

whereby intra- and inter-chip variations are simultaneously removed.

30. The sensor according to claim 29, wherein a reset period of said reset circuit begins before an ON timing of a clamping signal by said clamping circuit, continues after an OFF timing of the clamping signal, and ends before the photosensor starts charge transfer.

31. The sensor according to claim 29, wherein a clamp period of said clamping circuit begins after a trailing edge of a clamping signal pulse by said reset circuit, and ends before the photosensor starts charge transfer.

32. An electronic circuit device comprising:

a plurality of discrete chip circuits, each of said chip circuits including:

a cell array including a plurality of cells for outputting discrete signals;

a circuit for enabling an output of a specific cell;

an intra-chip common output bus for connecting output terminals of said plurality of cells;

a fan OUT circuit connected to said intra-chip common output bus;

an inter-chip common output bus connected to outputs of said plurality of chip circuits; and

an amplifier circuit connected to said inter-chip common output bus, said amplifier circuit comprising:

a reception circuit for receiving signals on said inter-chip common output bus;

a clamping circuit connected to an output line of said reception circuit, said clamping circuit clamping said output line to a first power supply potential, and then changing said output line from the first power supply potential to a floating state; and

an output circuit for receiving an output from said clamping circuit, and outputting an output signal of said electronic circuit device.

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